REMARKS/ARGUMENTS

Claims 1-20 have been resubmitted. Claims 1, 6, 10, 15, 17, and 19 have been amended. Claims 4, 5, 8, 9, 16, 18, 20, and 21 have been cancelled.

In the Office Action, the Claims 1-5, 11, 12, 15, 17, and 18 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Claims 6, 8-10, 13-14, 16 and 19-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over by Damiani et al. in view of Deo. Claims 1-5, 7, 11-12, 15 and 17-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Damiani in view of Deo and Murata. Claim 21 was rejected under 35 U.S.C. 103(a) as being unpatentable over Damiani, Deo, and Hunnicutt.

Rejections under 35 U.S.C. 101

Claims 1-5, 11, 12, 15, 17, and 18 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. In particular, the Examiner stated that the claimed "logic operation unit" is directed toward non-statutory subject matter and is "at best, function[al] (sic) descriptive material per se." Applicants disagree that a logic operation unit is non-statutory subject matter. Nevertheless, Applicants have amended Claim 1 to include the following limitations:

" , wherein said path expression is extracted from a received query requesting access to said database "

" , said logic operation unit issuing a decision which allows access, or does not allow access, to said data in response to said query."

Accordingly, Claim 1, and claims 2-5 dependent thereon, now recite the necessary physical structure (database), and interaction and physical transformations (e.g. receiving a query, and issuing a decision allowing access to the database) to render the claim statutory under 35 USC 101.

Claim 11 is dependent on Claim 10, which is clearly statutory, since it includes such elements as a "database retrieval system" and "a database". The addition of a "logic operation unit", even if it were a non-statutory element, does not render the otherwise statutory claim non-statutory. For example, MPEP 2106.01 (I) states:

USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim.

Hence, the addition of a allegedly non-statutory "logic operation unit" to Claim 11 does not render the otherwise statutory claim non-statutory. Hence, Claim 11 and Claim 12, dependent thereon, meet the requirements of 35 USC 101.

Claim 15 already contained statutory elements including "predetermined storage means". Nevertheless Applicants have amended this claim to further recite:

"_, the path expression being derived from a received query_ "

"_, and issuing a decision allowing access or not allowing access to said database_ "

These steps involve interaction with physical elements. Hence, Claim 15 now recites the necessary statutory elements as a whole to meet the requirements of 35 USSC 101.

Claim 17 has been amended to recite:

"A <u>computer readable medium encoded with a computer</u> program..."

According to MPEP 2106.01 (I), citing <u>In re Lowry</u> 32 F.3d 1579 (Fed. Cir. 1994), such a claim is statutory. Hence, Claim 17, and Claim 18 dependent thereon, meet the requirements of 35 USC 101.

Rejections under 35 U.S.C. 103(a)

Claims 6, 8-10, 13-14, 16, and 19-20 were rejected under 35 U.S.C. 102(a) as being anticipated by Damiani in view of Deo.

<u>The Damiani Reference</u>

The Examiner has cited the article entitled "A Fine-grained Access Control System for XML Documents", dated May 2002, (hereinafter "Damiani") in rejecting the claims.

Damiani, at page 169, discusses two categories of access control systems for XML documents. In describing the first category Damiani states:

> "However, these approaches typically operate at the
> file-system level, <u>independently of the data that</u>
> <u>have to be protected from unauthorized accesses</u>."
> (see Damiani at p. 169, emphasis added)

Damiani then proceeds to discuss problems with this approach.

The second category of access control system is the kind advocated and disclosed by Damiani in the rest of the paper. It is described as:

> "We present an access control model to protect
> information distributed on the Web that, by exploiting
> XML's own capabilities, allows the definition and
> enforcement of access restrictions directly on the
> structure and content of the documents." (See Damiani
> at p. 169, emphasis added)

The fact that the Damiani system operates on the structure and contents of the documents to be accessed is further illustrated by Figure 11 in Damiani, which clearly shows that the XML document (for which access is requested) is accessed and parsed. "Parsing" is the first of the three main steps in the Damiani system, the other two steps being "compute view" and "unparsing" as described on page 198-199 of Damiani. In particular, on page 198 Damiani states:

> "The parsing step consists of the syntax check of the
> requested document... ."

The result of the parsing is an object-oriented document graph which is used in the next two steps to make the access determination in response to a request.

Thus, it is clear that Damiani teaches an access control system that accesses the documents for which access is requested. Damiani performs an analysis by checking the structure of the XML document to be accessed. Damiani teaches away from the first type of access control system discussed

above, which operates at the file-system level, independent of the data that is being protected.

Applicants' invention is clearly of the first type. It operates independently of the data that is being protected. In particular, Applicants' invention performs a preliminary access decision <u>prior to</u> an actual analysis being performed by checking a structure of an XML document. It does this by analyzing a path expression (extracted from a received query) in which a retrieval condition is described using an access control policy indicting an access condition. (See Applicants' specification at page 9, lines 10-24).

The access analysis performed by Applicants' invention is considered <u>preliminary</u> for the following reason. In cases where this analysis yields a decision in which the retrieval condition is always permitted or always denied, the access analysis is complete. However, there is also the possibility that the analysis indicates that the propriety of the access is indeterminate. In this case, a conventional access analysis must be performed by checking the structure of the XML document to be accessed. (See Applicants' specification at page 26, lines 6-16).

An important advantage of applicants' invention is that the speed of the access decision process is increased because at least in those cases where a yes or no decision can be made, the time consuming process of retrieving the XML document is avoided. Only where the preliminary decision is indeterminate must the XML document be retrieved. In prior systems such as Damiani, retrieval of the XML document was needed in each case, resulting in slower performance.

The Deo Reference

The Deo reference makes an access decision prior to accessing the requested document. However, it does this by merely looking up the identity of the requestor in a look-up table. In particular, Deo says at col. 4 lines 37-39.

"The file system 118 includes an ACL (access control list) table 204 that performs the security function of determining which users and/or applications have access to which files. "

Hence, The Deo reference therefore presupposes that the requesting "user and/or application" is specifically listed in a look up table. However, the cited references do not teach how to make the authorization decision if such a lookup table were not available, or if the requestor were not listed in the table. Applicants' invention makes authorization decisions without any reference to such a look-up table explicitly containing the identity of the requestor. Instead, Applicants' invention makes the authorization decision merely by analyzing the query itself, **without** checking the identity of the requestor in a look-up table, as taught by Deo, and without retrieving the requested document.

Regarding claim 6, applicants have amended this claim to include the limitations of Claims 8 and 9. Thus claim 6 recites that a path expression is extracted from a query (from previous claim 8) and that access rights are decided based on this path expression. In contrast, Deo relies on a look up table, and Damiani relies on accessing the requested file. Neither reference singly, or in combination, teach or suggest a way to make access decisions based on information from the query itself without accessing the requested document or checking the identity of the requestor in a lookup table.

For these reasons Applicants respectfully submit that Claim 6 is not rendered obvious by Damiani in view of Deo.

Regarding Claim 10, this Claim has been amended to recite:

"...said preliminary access rights analysis device deciding said access rights without retrieving said XML document if said access right is always permitted or always denied, and only where said access right is indeterminate, said database retrieval system accessing said XML document to determine an access right. "

Support for this amendment may be found at Applicants' specification at page 9, lines 16-18.   Applicants disagree with the Examiner's position that Damiani includes an access decision of "intermediate" within the meaning of Applicants' claims.   Nevertheless, Damiani does not teach the amended feature that the XML document be accessed **only** in the case of an "indeterminate" determination.   Hence, Claim 10 and Claims 13 and 14, dependent thereon, are patentable.

Claim 19 has been amended to include the limitations of Claim 20. Thus, claim 19 recites that a path expression is extracted from a query and that access rights are decided based on this path expression.   In contrast, Deo relies on a look up table, and Damiani relies on accessing the requested file. Neither reference singly, or in combination, teach or suggest a way to make access decisions based on information from the query itself without accessing the requested document or checking the identity of the requestor in a lookup table.

For these reasons Applicants respectfully submit that Claim 19 is not rendered obvious by Damiani in view of Deo.

Claims 1-5, 7, 11-12, 15 and 17-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Damiani in view of Deo and Murata. The Damiani

and Deo references were discussed above. The Murata reference proposes an extension of underlying alphabets which represent conditions on nodes in XML documents. Murata does not teach or suggest that its teachings may be applied to the field of access control systems. More particularly, Murata does not teach that a decision regarding access rights to a data file in a database be made without accessing the data file nor that the decision be made based on path expressions.

Claim 1 has been amended to include the limitations of Claims 4 and 5. Thus, claim 1 recites that a path expression is extracted from a query and that access rights are decided based on this path expression. In contrast, Deo relies on a look up table, and Damiani relies on accessing the requested file. Murata does not teach access control at all. None of the references singly, or in combination, teach or suggest a way to make access decisions based on information from the query itself without accessing the requested document or checking the identity of the requestor in a lookup table.

For these reasons, Claims 1 and 2-3, dependent thereon, are patentable under 35 USC 103(a).

Claim 7 is dependent on Claim 6 and is patentable over Diamiani and Deo for the reasons discussed above. The Murata reference, as discussed above, does not teach deciding access rights as claimed. Hence, Claim 7 is patentable under 35 USC 103(a).

Claim 11 is dependent on Claim 10 and is patentable over Diamiani and Deo for the reasons discussed above. The Murata reference, as discussed above, does not teach deciding access rights, as claimed. Hence, Claim 11 and Claim 12, dependent thereon, is patentable under 35 USC 103(a).

Claim 15 has been amended to recite:

", the path expression being derived from a received query;"

", and issuing a decision allowing access or not allowing access to said database."

Thus, claim 15 recites that a path expression is extracted from a query. In contrast, Deo relies on a look up table, and Damiani relies on accessing the requested file. Murata does not teach access control at all. None of the references singly, or in combination, teach or suggest a way to make access decisions based on information from the query itself without accessing the requested document or checking the identity of the requestor in a lookup table. Claim 15 is thus patentable under 35 USC 103(a).

Claim 17 has been amended to include the limitations of Claim 18. Thus, claim 17 recites that a path expression is extracted from a query and that access rights are decided based on this path expression. In contrast, Deo relies on a look up table, and Damiani relies on accessing the requested file. Neither reference singly, or in combination, teach or suggest a way to make access decisions based on information from the query itself without accessing the requested document or checking the identity of the requestor in a lookup table. Murata does not teach access control. For these reasons Applicants respectfully submit that Claim 17 is not rendered obvious by Damiani in view of Deo and Murata.

CONCLUSION

Reconsideration and withdrawal of the rejections with respect to all remaining is requested. Applicants submit that the claims are now in condition for allowance.

In the event the Examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 090441.

Respectfully submitted,

Dated: <u>March 5, 2009</u>　　　　　By: ___/Donald L. Wenskay/_____
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